



## **WATER RESOURCES RESEARCH GRANT PROPOSAL**

**Project ID:** 2005MT71B

**Title:** STUDENT FELLOWSHIP: Factors that influence displacement of native cutthroat trout by nonnative brook trout

**Project Type:** Research

**Focus Categories:** Ecology, Nutrients, Hydrology

**Keywords:** trout, displacement

**Start Date:** 03/15/2005

**End Date:** 06/30/2006

**Federal Funds:** \$1,500

**Non-Federal Matching Funds:** \$0

**Congressional District:** At Large

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**Abstract**

The Problem: Declines in the abundance, distribution, and genetic diversity of westslope cutthroat trout *Oncorhynchus clarki lewisi* throughout their native range, especially within the upper Missouri River basin in the Northern Rocky Mountains, have prompted fisheries managers to identify mechanisms responsible for population declines, and develop effective conservation and recovery programs (Allendorf and Leary 1988; Liknes and Graham 1988; Behnke 1992; McIntyre and Rieman 1995; Shepard et al. 1997). Factors associated with these declines include introductions of nonnative fishes, habitat changes, and over-exploitation (Hanzel 1959; Liknes and Graham 1988; Behnke 1992; McIntyre and Rieman 1995). Many habitats previously occupied by WCT in the Northern Rocky Mountains now contain populations of other nonnative trout, particularly brook trout *Salvelinus fontinalis* (Behnke 1992; McIntyre and Rieman 1995), indicating that nonnative trout may replace or displace WCT (MacPhee 1966; Griffith 1972; Behnke 1979; Liknes and Graham 1988; Griffith 1988; Dunham et al. 2003); however, little information exists regarding the mechanisms responsible for displacement of cutthroat

trout by brook trout. Conservation of cutthroat trout requires maintaining healthy watersheds, as cutthroat trout need cold, clean water to persist. My research will focus on how watershed conditions influence the persistence of cutthroat trout, especially on how these conditions influence the displacement of cutthroat trout by nonnative brook trout.